

AD-A104 162

ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19304B MLRS; MISSILE NUMBER V-38-001, ROUND NUMBER V-182/IW-1, --ETC(U)
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⑨ METEOROLOGICAL DATA REPORT.

19304B MLRS,
Missile Number V-38-001,
Round Number V-182/IW-1,

10 Aug 81

10 August 1981.

⑩ DONALD C. KELLER
Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

⑯ 1F665702D627

EP D2

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19304B MLRS, Missile No. V-38-001, Round No. V-182/IW-1 presented in tabular form.		

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INTRODUCTION

19304B MLRS, Missile Number V-38-001, Round Number V-182/IW-1, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1508:56 MDT, 10 Aug 81. The scheduled launch time was 1400 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations.

a. Surface:

(1) Standard surface observations to include pressure, temperature ($^{\circ}$ C), relative humidity, dew point ($^{\circ}$ C), density (gm/m^3), wind speed and direction, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air:

(1) Low level wind data were obtained from Pilot-Balloon observations at:

SITE AND ALTITUDE

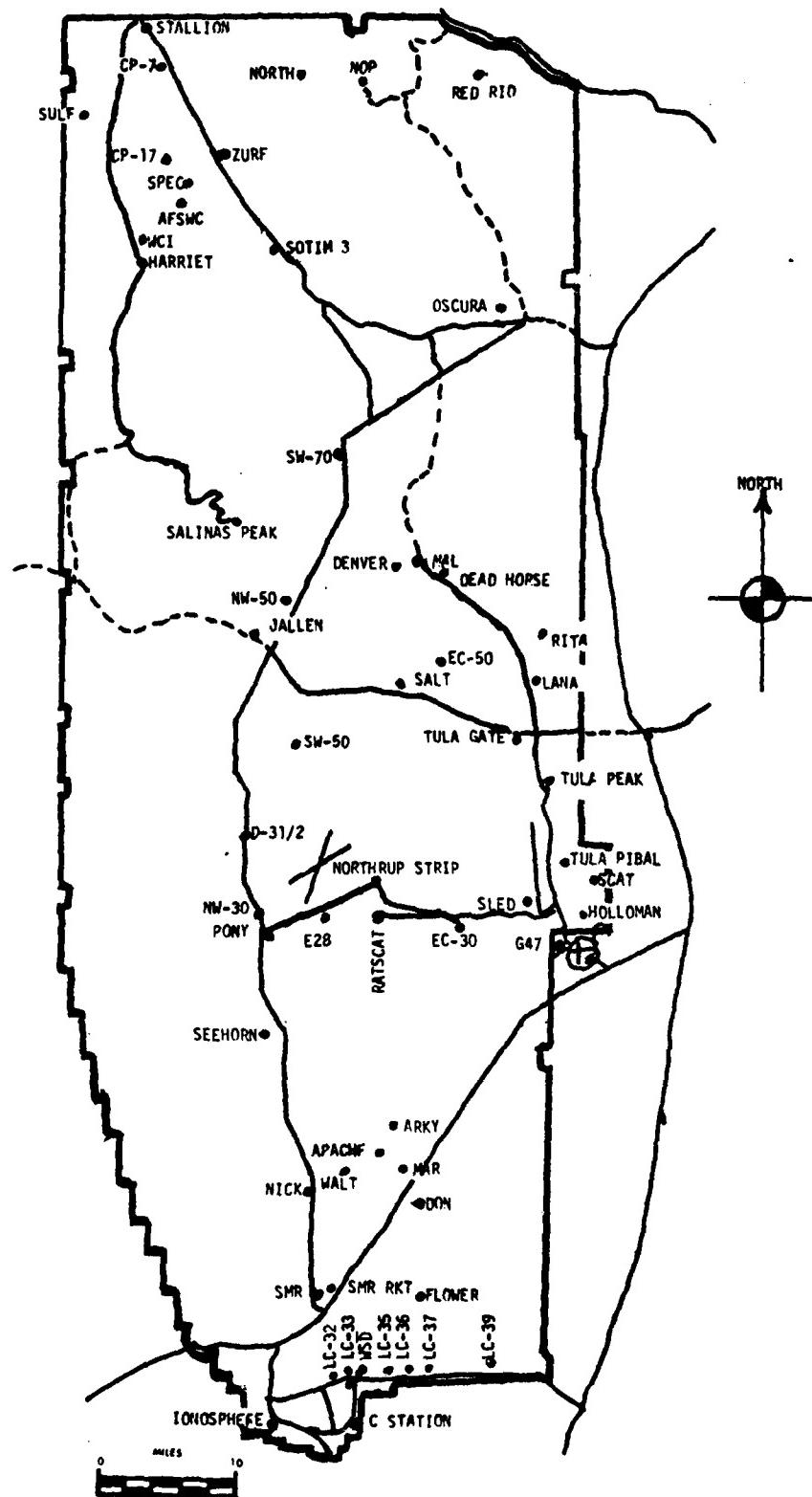
LC-33	2 KM
NICK	2 KM

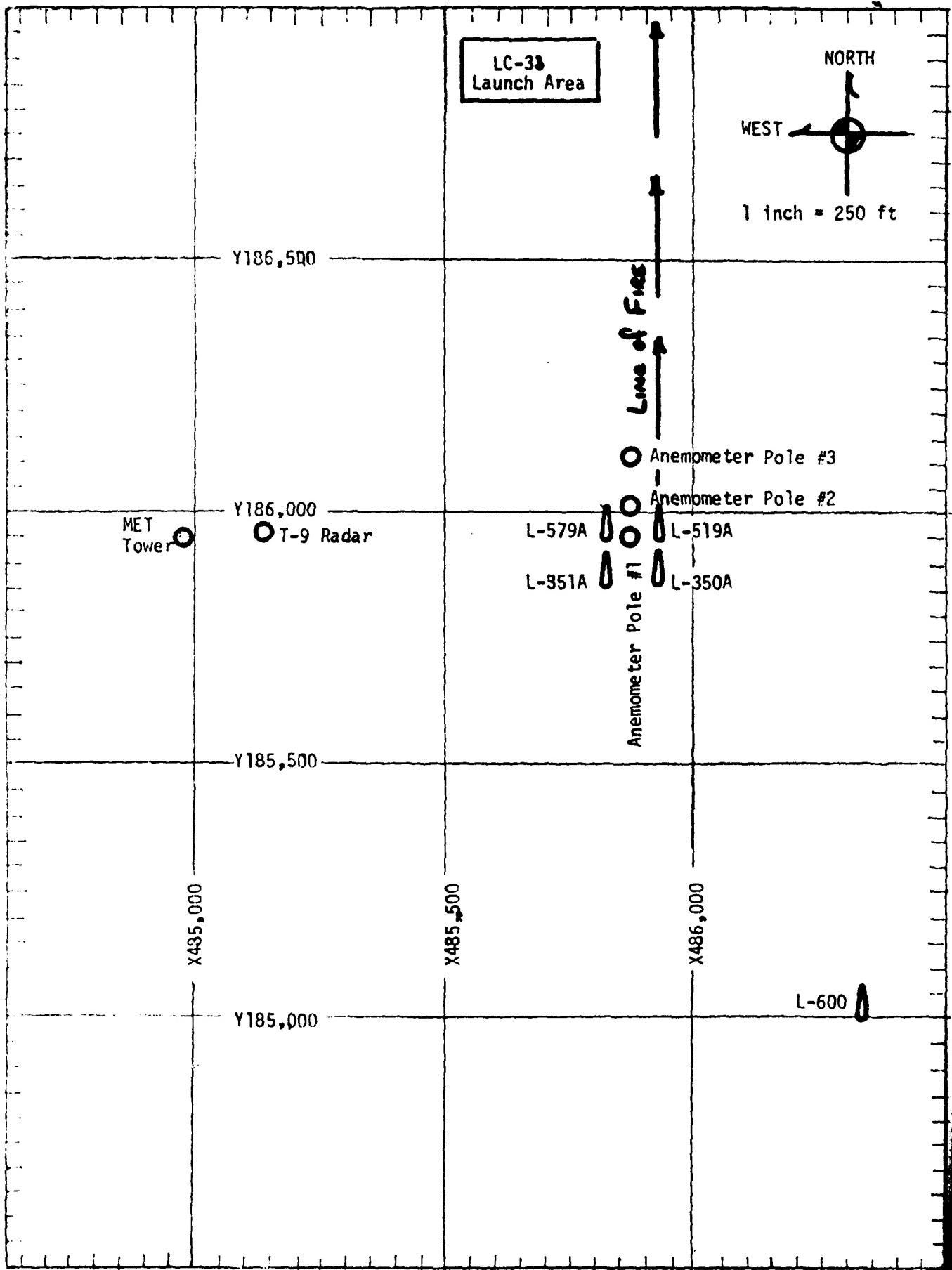
(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME

LC-37	1200 MDT
WSD	1300 MDT
LC-37	1430 MDT
WSD	1515 MDT

WSMR METEOROLOGICAL SITES





ODDIE'S CLIPPER OBSERVATION

TABLE I

~~DATE 10~~ ~~AM 10~~ ~~1981~~

אברהם עוזר

STATION 1 C-33

$$X = 485.135.76 \quad Y = 185.919.24 \quad H = 3.988.57$$

PSYCHOMETRIC COMPUTATION

TIME:	MDT	1509
DRY BULB TEMP.	31.5	
WET BULB TEMP.	19.8	
WET BULB DEPR.	11.7	
DEW POINT	14.4	
RELATIVE HUMID.	36	

2

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	134	06	T-30	141	05	T-30	163	07
T-20	121	08	T-20	146	08	T-20	168	08
T-10	131	10	T-10	152	09	T-10	146	10
T0.0	142	10	T0.0	150	10	T0.0	156	11
T+10	119	07	T+10	132	07	T+10	150	11

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	118	10	T-30	157	11
T-20	099	13	T-20	180	16
T-10	108	13	T-10	169	15
T0.0	114	14	T0.0	171	16
T+10	115	13	T+10	176	16

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	148	10	T-30	157	15
T-20	167	16	T-20	158	15
T-10	164	15	T-10	157	14
T0.0	169	16	T0.0	154	15
T+10	172	15	T+10	168	15

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 10 Aug 81

SITE: LC-33
 TIME: 1509 MDT
 WSTM COORDINATES:
 X= 484,837.34
 Y= 184,124.44
 H= 3,975.57

SITE: NICK
 TIME: 1509 MDT
 WSTM COORDINATES:
 X= 470,734.56
 Y= 255,775.64
 H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS	LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	145	07	SURFACE	145	04
150	161	11	150	152	09
210	160	11	210	154	10
270	156	11	270	156	10
330	153	12	330	159	10
390	152	12	390	158	10
500	148	13	500	152	09
650	146	13	650	138	08
800	150	12	800	134	12
950	153	09	950	138	15
1150	146	08	1150	142	15
1350	151	10	1350	140	16
1550	147	15	1550	141	15
1750	145	16	1750	136	12
2000	142	13	2000	141	11

TABLE 5AIMING AND T-TIME COMPUTER MET MESSAGES
10 Aug 1981

LC-37 1200 MDT	WSD 1300 MDT	LC-37 1430 MDT	WSD 1514 MDT
METCM1324063	METCM1324064	METCM1324063	METCM1324064
101800122882	101900124884	102050122880	102120124882
00178002 30510882	00204004 30530884	00231004 30670880	00240010 30670882
01167005 30320873	01249008 30400874	01257005 30490871	01259015 30520872
02317003 29910848	02265010 30100850	02233009 30090846	02266011 30170848
03241007 29500810	03258009 29710812	03263012 29680809	03272012 29790810
04244005 29020764	04255009 29240766	04279011 29180763	04278012 29310765
05243007 28630720	05172008 28830722	05236009 28730719	05286009 28810721
06201007 28300678	06120005 28440681	06227006 28330678	06211005 28420679
07243002 27950639	07223002 28090641	07037003 27950638	07154005 28040640
08199004 27600601	08243003 27720603	08035003 27610600	08116004 27680602
09149004 27200564	09173004 27330567	09085007 27310564	09195008 27280566
10098006 26900530	10213007 27030532	10194008 27020530	10247008 27000531
11065005 26760497	11297005 26730500	11320005 26760497	11423005 26740499
12461005 26260452	12443007 26290454	12433009 26290451	12436011 26280453

STATION ALTITUDE 4051.37 FEET MSL
 10 AUG. 81 1200 HRS MDT
 ASCENSION NO. 181

SIGNIFICANT LEVEL DATA
 2220100181

LC-37

TABLE 6

GEODETIC COORDINATES
 32.40175 LAT DEG
 106.31232 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPOINT DEGREES CENTIGRADE	R.H. PERCENT
882.4	4051.4	29.8	14.7	40.0
850.0	5138.4	24.0	12.0	47.0
773.0	7834.2	16.3	9.7	65.0
746.2	8817.8	13.3	10.1	61.0
700.0	10580.7	10.4	5.6	72.0
666.4	11222.8	7.6	3.3	74.0
657.6	12283.1	7.1	-5	63.0
632.4	13336.6	4.8	-1.6	62.0
615.6	14057.5	3.6	-6.1	49.0
582.8	15511.3	4	-8.5	51.0
550.6	17000.2	-3.7	-10.3	60.0
519.0	18532.9	-4.8	-22.7	23.0
500.0	19494.7	-6.4	-25.6	20.0
460.4	20519.6	-8.1	-24.6	25.0
435.6	23000.1	-12.5	-29.3	23.0
400.0	25123.2	-17.2	-34.2	21.0
371.4	26941.6	-20.7	-30.7	40.0
337.8	29229.6	-25.2	-42.0	19.0
300.0	32030.7	-31.6	-47.0	20.0

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81 1200 hrs MDT
ASCENSION NO. 181

UPPER AIR DATA
2220160101
LC-37

OUT TIC COORDINATES
32°40'17.5 LAT DEG
106°31'23.2 LON DEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CHICHL METER	SOUND KNOTS	SPLIT OF WIND DATA DIRECTION DEGREES (N)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	882.4	29.8	14.7	40.0	1007.4	080.5	100.0	1.9
4500.0	868.9	27.4	13.7	42.9	1000.2	077.7	112.1	2.5
5000.0	854.1	24.7	12.4	46.1	992.4	074.5	120.1	3.3
5500.0	839.2	23.0	11.6	49.4	981.1	072.5	125.1	4.0
6000.0	824.6	21.5	11.5	52.8	968.7	070.9	128.5	4.8
6500.0	810.2	20.1	11.1	56.1	950.5	069.2	130.9	5.6
7000.0	796.0	18.7	10.6	59.4	944.5	067.6	133.1	6.1
7500.0	782.0	17.3	10.1	62.6	932.6	065.9	136.2	6.7
8000.0	768.4	15.8	9.8	67.7	920.9	064.9	139.9	5.3
8500.0	754.8	14.3	10.1	75.6	909.1	062.5	144.9	6.1
9000.0	741.3	13.0	9.6	80.1	896.9	061.0	146.7	7.2
9500.0	728.0	12.2	8.4	77.5	883.7	060.0	159.3	7.4
10000.0	714.9	11.4	7.1	75.0	870.7	059.9	129.5	7.4
10500.0	702.1	10.5	5.8	72.4	857.8	057.8	120.1	6.4
11000.0	689.3	9.5	4.9	72.6	845.5	056.6	112.6	5.9
11500.0	676.8	8.5	4.0	73.4	833.4	055.3	107.7	5.5
12000.0	664.5	7.5	2.7	71.6	821.4	054.0	111.2	4.3
12500.0	652.3	6.6	0.1	62.8	809.4	052.8	121.0	3.0
13000.0	640.3	5.5	-1.1	62.3	797.8	051.4	136.5	2.4
13500.0	628.6	4.5	-2.8	59.1	786.2	050.2	142.3	2.1
14000.0	616.9	3.7	-5.7	50.0	774.4	049.0	126.1	1.9
14500.0	605.4	2.6	-6.8	49.6	763.0	047.7	106.1	2.5
15000.0	594.1	1.5	-7.7	50.3	751.9	046.4	94.3	3.3
15500.0	583.0	0.4	-8.5	51.0	740.9	045.0	89.8	4.3
16000.0	572.0	-0.9	-9.1	54.0	730.6	043.4	85.8	5.0
16500.0	561.2	-2.3	-9.7	57.0	720.5	041.8	70.7	5.1
17000.0	550.6	-3.7	-10.3	60.0	710.5	040.1	71.2	5.2
17500.0	540.1	-4.1	-13.4	47.9	698.1	039.5	63.5	5.4
18000.0	529.8	-4.4	-17.2	35.9	686.0	039.0	57.2	5.4
18500.0	519.7	-4.8	-22.3	23.8	674.1	038.4	50.9	5.2
19000.0	509.7	-5.6	-24.1	21.5	663.2	037.5	44.3	4.9
19500.0	499.9	-6.4	-25.6	20.0	652.5	036.4	36.2	4.5
20000.0	490.2	-7.2	-25.0	22.5	641.4	035.5	20.1	3.4
20500.0	480.8	-8.1	-21.6	24.9	631.4	034.5	14.9	2.2
21000.0	471.4	-9.0	-25.5	24.6	621.2	033.4	271.2	3.0
21500.0	462.2	-9.8	-26.4	24.2	611.1	032.3	252.0	5.3
22000.0	453.1	-10.7	-27.4	23.8	601.2	031.3	215.6	7.6
22500.0	444.5	-11.6	-28.3	23.4	591.5	030.2	241.5	7.6
23000.0	435.6	-12.5	-29.3	23.0	581.9	029.1	236.1	7.3
23500.0	426.9	-13.6	-30.4	22.6	572.6	028.0	216.5	6.3

STATION ALTITUDE 4051.37 FEET MSL
 10 AUG. 81 1200 THIS MDI
 ASCENSION NO. 181

UP, R AIR DATA
 2220160161
 LC-37

TABLE 7 CON'T

DEPTH	PRESSURE ATMOS. IN SL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WEIGHT GM/CUBIC METER	SOUND KNOTS	DIRECTION DEGREES (W)	WIND DATA SPD(KTS) DIR(GRS)	INDEX OF REFRACTION
2400.0	410.5	-14.7	-51.6	22.1	563.0	020.4	203.1	6.6
2450.0	410.1	-15.0	-52.0	21.6	555.0	025.1	199.4	6.1
2500.0	402.0	-16.9	-53.9	21.1	546.4	023.7	201.6	9.9
2550.0	392.9	-17.9	-53.1	24.9	537.5	022.5	207.3	12.0
2600.0	385.9	-18.9	-52.0	30.2	528.6	021.3	209.5	13.3
2650.0	370.2	-19.9	-51.2	35.4	519.0	020.2	209.6	13.8
2700.0	370.5	-20.8	-31.0	39.5	511.3	019.0	211.5	14.4
2750.0	362.9	-21.8	-33.1	34.9	502.0	017.0	215.1	15.3
2800.0	355.5	-22.8	-35.4	30.3	494.4	016.5	220.1	16.1
2850.0	348.2	-23.0	-37.9	25.7	486.2	015.3	227.9	16.8
2900.0	341.0	-24.7	-40.6	21.1	478.2	014.1	232.6	18.0
2950.0	334.0	-25.8	-42.5	19.1	470.3	012.7	231.0	20.2
3000.0	327.0	-27.0	-43.3	19.3	462.6	011.3	231.0	21.5
3050.0	320.1	-28.1	-44.2	19.5	455.0	010.9	233.5	21.4
3100.0	313.4	-29.2	-45.1	19.6	447.6	008.5		21.0
3150.0	306.8	-30.4	-46.0	19.8	440.2	007.0		20.9
3200.0	300.4	-31.5	-46.9	20.0	433.1	005.6		20.8

STATION ALTITUDE 4051.37 FEET MSL
10 AUG. 81 1200 HRS WDT
ASCENSION NO. 181

MANOMETRIC LEVELS
2220100181
LC-37
TABLE 8

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FLAT	TEMPERATURE DEGREES CENTIGRADE	REL.HU. PERCENT	WIND DATA	
				AIR DEWPNT	DIRECTION DEGREES (TN) SPEED KNOTS
850.0	5155.	24.0	47.	12.0	121.7 3.5
800.0	6862.	19.1	58.	10.8	132.3 6.2
750.0	8669.	13.7	79.	10.1	146.4 6.5
700.0	10570.	10.4	72.	5.6	118.5 6.3
650.0	12584.	6.4	63.	-7.2	123.4 2.9
600.0	14723.	2.1	50.	-10.5	99.5 2.6
550.0	17006.	-3.7	59.	-25.6	70.9 5.2
500.0	19467.	-6.4	20.	-27.7	36.6 4.5
450.0	22146.	-11.0	24.	-34.2	244.2 7.8
400.0	25081.	-17.2	21.	-37.2	203.0 10.3
350.0	28326.	-23.5	27.	-47.0	225.9 16.5
300.0	31966.	-31.6	20.		

JULY 10, 1940
10 AM. 60° 01' 30° 00' EET 1 min.
A.S.U. STO. 1.0. 243

SIG. D. ICAIIF L. VLL JAFIA
22002943
S.M.L. S.H. 106.37053 L.O. 1.01

TABLE 9

PLATE NUMBER	PLATE DATE	IT. AND ALTITUDE	IT. AND ALTITUDE
ALL PLATES	ALL PLATES	AIR	REFLECTION
ALL PLATES	ALL PLATES	REFLECTION	REFLECTION
836-9	5-19-40	30.2	13.0
367-9	4-53-40	28.2	12.5
658-6	21-32-40	26.0	11.7
754-8	38-15-3	15.8	5.7
702-0	1-06-45	11.3	4.1
672-0	126-07-1	8.0	3.5
656-2	1235-0-3	7.6	3
650-2	1306-0-2	5.2	-6.1
552-6	1047-0-2	-7	-19.4
546-6	1723-5-3	-2.4	-15.4
538-4	1762-0-5	-3.1	-15.3
526-9	1619-1-8	-3.0	-25.2
510-3	1959-7-9	-6.0	-72.5
475-9	20-02-4	-8.3	-29.0
476-4	2111-0-8	-8.2	-39.9
497-6	2470-0-0	-16.0	-36.4
439-6	2517-7-5	-16.9	-30.7

10 Aug. 1909. 3,999 ft. 1000' above sea level.

TABLE 10

STATION ALTIMETER 3989.0 FRT 1.51
10 AUG. 31 1300 hrs MDT
ALTITUDE 101.00. 263

REF. R A.G. 101.0
2.206.0.45
0.11F 0.055

at 000011C (0000L) 101.001
32.40045 L&I UE,
100.37033 L&I TE,

TABLE 10 CONT'

REF. R ALTIC PRESSURE	REF. R ALTIC ALTITUDE						
427.7	-13.3	-30.3	15.3	57.0	27.0	21.9	10.6
417.3	-15.0	-35.3	15.0	56.0	26.0	20.0	10.0
411.1	-10.1	-35.1	15.9	55.7	24.9	20.4	10.0
405.0	-10.3	-32.4	24.2	54.7	23.3	20.9	10.0

STATION ALTITUDE 3989.00 FEET
16 AUG. 1961 1300 HRS. WDI
ASCUSATION 1.0. 543

ALTIMETER
22200.0043
WITNESS 5A.05

UTM FILE COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 11

REFLECTOR NUMBER	REFLECTOR HEIGHT	REFLECTOR TYPE	REFLECTOR POSITION	REFLECTOR POSITION	REFLECTOR POSITION
REFLECTOR NUMBER	REFLECTOR HEIGHT	REFLECTOR TYPE	REFLECTOR POSITION	REFLECTOR POSITION	REFLECTOR POSITION
5129.	26.0	11.7	4.5*	141.2	7.6
6167.	20.8	11.2	5.0*	144.3	6.2
756.0	16.4	6.5	6.7*	129.0	0.0
705.0	10.94.	11.3	4.7	79.7	0.5
655.0	12.12.	7.2	-1.1	50*	2.5
606.0	14.79.	5.0	-7.6	124.7	2.2
555.0	17.51.	-2.3	-19.2	110.0	5.1
506.0	19.20.	-6.2	-28.5	100.7	4.8
450.0	22.23.	-10.6	-32.0	15*	240.8
409.0	25.35.	-16.9	-30.7	29*	6.0

TRANSIENTS AT 4.51 GHz
145° ± 4° MDT
KSC-51B 6.0. 1.2

TRANSIENTS AT 4.51 GHz
145° ± 4° MDT
LC-37

TABLE 12

| TRANSIENTS AT 4.51 GHz
ALFCUT |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 396.4 | 465.4 | 31.6 | 33.0 |
| 356.3 | 366.2 | 26.5 | 18.9 |
| 794.4 | 631.3 | 21.2 | 44.0 |
| 761.8 | 5217.1 | 17.1 | 35.0 |
| 760.0 | 10362.8 | 11.1 | 64.0 |
| 655.4 | 12360.1 | 7.1 | 79.0 |
| 612.8 | 14163.2 | 3.7 | 71.0 |
| 567.8 | 19276.8 | 1.5 | 49.0 |
| 571.0 | 16015.7 | .2 | 26.0 |
| 559.0 | 16791.5 | -1.0 | 44.0 |
| 533.8 | 17567.5 | -2.7 | 67.0 |
| 515.6 | 1743.7 | -3.8 | 73.0 |
| 566.0 | 14503.9 | -5.5 | 16.0 |
| 484.2 | 20336.5 | -6.2 | 18.0 |
| 435.2 | 22619.3 | -12.0 | 25.0 |
| 400.0 | 25154.2 | -16.2 | 20.0 |
| 389.4 | 25117.5 | -17.8 | 20.0 |
| 382.4 | 26264.4 | -17.4 | 19.0 |
| 360.0 | 32190.6 | -31.0 | 20.0 |

4206.110 COORDINATES
J2000.0175 KAT OFC
106.31232 1.61. 0.0

INITIAL ALTITUDE 4,601.47 FEET
10 A.M. C. T.
ASCEND. NO. 1.2

UP TO ALTITUDE 4,601.47 FEET
2,241.01 SEC
L.C.-37

TABLE 13

REFRACTIVE ALTITUDE	PRESSURE	TEMPERATURE	ATMOSPHERIC AIR	DYNAMIC PRESSURE	COEFFICIENT OF CONDUCTANCE	ATMOSPHERIC DENSITY	ATMOSPHERIC PRESSURE	ATMOSPHERIC REFRACTIVE INDEX	INDEX OF REFRACTION
4,601.4	3.451.4	71.4	1.005	33.1	994.0	0.0200	1.010	4.1	1.001020
4,601.5	3.451.5	70.5	1.009	30.7	991.1	0.0101	1.016	5.4	1.0010207
4,601.6	3.451.6	70.0	1.000	45.0	982.0	0.0102	1.020	6.9	1.0010200
4,601.7	3.451.7	69.5	1.002	43.1	971.1	0.0104	1.024	8.5	1.0010192
4,601.8	3.451.8	69.0	1.009	56.0	959.2	0.0106	1.030	10.1	1.0010188
4,601.9	3.451.9	68.5	1.003	57.1	947.3	0.0107	1.037	11.2	1.0010273
4,602.0	3.452.0	68.0	1.004	51.7	936.4	0.0109	1.045	12.0	1.0010269
4,602.1	3.452.1	67.5	1.007	55.6	924.5	0.0101	1.053	12.2	1.0010255
4,602.2	3.452.2	67.0	1.011	55.2	914.6	0.0104	1.061	12.4	1.0010251
4,602.3	3.452.3	66.5	1.015	62.0	915.5	0.0104	1.069	12.4	1.0010261
4,602.4	3.452.4	66.0	1.020	65.0	901.0	0.0104	1.066	11.1	1.0010256
4,602.5	3.452.5	65.5	1.021	69.0	882.0	0.0104	1.053	9.9	1.0010252
4,602.6	3.452.6	65.0	1.023	72.2	877.7	0.0104	1.049	8.7	1.0010248
4,602.7	3.452.7	64.5	1.025	75.4	865.0	0.0104	1.042	7.5	1.0010244
4,602.8	3.452.8	64.0	1.025	73.6	854.0	0.0103	1.041	6.1	1.0010240
4,602.9	3.452.9	63.5	1.025	77.1	842.7	0.0104	1.039	5.9	1.0010233
4,603.0	3.453.0	63.0	1.025	74.3	831.0	0.0104	1.036	6.6	1.0010230
4,603.1	3.453.1	62.5	1.025	70.3	819.0	0.0104	1.030	7.2	1.0010220
4,603.2	3.453.2	62.0	1.025	72.0	819.0	0.0104	1.030	7.2	1.0010220
4,603.3	3.453.3	61.5	1.025	75.4	819.0	0.0104	1.029	7.5	1.0010220
4,603.4	3.453.4	61.0	1.025	69.3	803.0	0.0103	1.029	7.0	1.0010213
4,603.5	3.453.5	60.5	1.025	65.2	790.0	0.0103	1.029	7.2	1.0010206
4,603.6	3.453.6	60.0	1.025	57.1	784.0	0.0103	1.029	7.9	1.0010199
4,603.7	3.453.7	59.5	1.025	51.0	775.1	0.0104	1.018	3.4	1.0010193
4,603.8	3.453.8	59.0	1.025	51.1	761.5	0.0102	1.018	3.8	1.0001019
4,603.9	3.453.9	58.5	1.025	60.1	750.0	0.0103	1.018	4.3	1.0010180
4,604.0	3.454.0	58.0	1.025	54.3	747.1	0.0103	1.018	3.2	1.0010182
4,604.1	3.454.1	57.5	1.025	65.2	735.7	0.0104	1.018	5.3	1.0010182
4,604.2	3.454.2	57.0	1.025	57.1	730.0	0.0104	1.018	2.9	1.0010182
4,604.3	3.454.3	56.5	1.025	53.2	721.3	0.0104	1.018	3.4	1.0010183
4,604.4	3.454.4	56.0	1.025	56.1	715.5	0.0104	1.018	3.8	1.0001018
4,604.5	3.454.5	55.5	1.025	54.3	709.0	0.0103	1.018	4.3	1.0010176
4,604.6	3.454.6	55.0	1.025	52.4	705.0	0.0103	1.018	5.5	1.0010176
4,604.7	3.454.7	54.5	1.025	44.3	695.7	0.0104	1.018	7.4	1.0010175
4,604.8	3.454.8	54.0	1.025	57.7	682.4	0.0104	1.018	6.4	1.0010177
4,604.9	3.454.9	53.5	1.025	50.4	671.0	0.0104	1.018	7.2	1.0010176
4,605.0	3.455.0	53.0	1.025	56.1	663.0	0.0104	1.018	6.0	1.0010171
4,605.1	3.455.1	52.5	1.025	56.5	653.0	0.0104	1.018	4.8	1.0010174
4,605.2	3.455.2	52.0	1.025	45.1	634.0	0.0104	1.018	4.8	1.0010174
4,605.3	3.455.3	51.5	1.025	52.4	624.0	0.0104	1.018	5.4	1.0010174
4,605.4	3.455.4	51.0	1.025	46.8	614.0	0.0104	1.018	6.4	1.0010174
4,605.5	3.455.5	50.5	1.025	50.4	605.0	0.0104	1.018	7.7	1.0010172
4,605.6	3.455.6	50.0	1.025	48.0	605.0	0.0104	1.018	7.7	1.0010172
4,605.7	3.455.7	49.5	1.025	46.0	586.0	0.0104	1.018	7.7	1.0010172
4,605.8	3.455.8	49.0	1.025	46.1	577.0	0.0104	1.018	7.7	1.0010172
4,605.9	3.455.9	48.5	1.025	47.7	568.0	0.0104	1.018	7.7	1.0010172
4,606.0	3.456.0	48.0	1.025	46.0	559.0	0.0104	1.018	7.7	1.0010172
4,606.1	3.456.1	47.5	1.025	47.7	550.0	0.0104	1.018	7.7	1.0010172
4,606.2	3.456.2	47.0	1.025	46.0	541.0	0.0104	1.018	7.7	1.0010172
4,606.3	3.456.3	46.5	1.025	47.7	532.0	0.0104	1.018	7.7	1.0010172
4,606.4	3.456.4	46.0	1.025	46.0	523.0	0.0104	1.018	7.7	1.0010172
4,606.5	3.456.5	45.5	1.025	47.7	514.0	0.0104	1.018	7.7	1.0010172
4,606.6	3.456.6	45.0	1.025	46.0	505.0	0.0104	1.018	7.7	1.0010172
4,606.7	3.456.7	44.5	1.025	47.7	496.0	0.0104	1.018	7.7	1.0010172
4,606.8	3.456.8	44.0	1.025	46.0	487.0	0.0104	1.018	7.7	1.0010172
4,606.9	3.456.9	43.5	1.025	47.7	478.0	0.0104	1.018	7.7	1.0010172
4,607.0	3.457.0	43.0	1.025	46.0	469.0	0.0104	1.018	7.7	1.0010172
4,607.1	3.457.1	42.5	1.025	47.7	460.0	0.0104	1.018	7.7	1.0010172
4,607.2	3.457.2	42.0	1.025	46.0	451.0	0.0104	1.018	7.7	1.0010172
4,607.3	3.457.3	41.5	1.025	47.7	442.0	0.0104	1.018	7.7	1.0010172
4,607.4	3.457.4	41.0	1.025	46.0	433.0	0.0104	1.018	7.7	1.0010172
4,607.5	3.457.5	40.5	1.025	47.7	424.0	0.0104	1.018	7.7	1.0010172
4,607.6	3.457.6	40.0	1.025	46.0	415.0	0.0104	1.018	7.7	1.0010172
4,607.7	3.457.7	39.5	1.025	47.7	406.0	0.0104	1.018	7.7	1.0010172
4,607.8	3.457.8	39.0	1.025	46.0	397.0	0.0104	1.018	7.7	1.0010172
4,607.9	3.457.9	38.5	1.025	47.7	388.0	0.0104	1.018	7.7	1.0010172
4,608.0	3.458.0	38.0	1.025	46.0	379.0	0.0104	1.018	7.7	1.0010172
4,608.1	3.458.1	37.5	1.025	47.7	370.0	0.0104	1.018	7.7	1.0010172
4,608.2	3.458.2	37.0	1.025	46.0	361.0	0.0104	1.018	7.7	1.0010172
4,608.3	3.458.3	36.5	1.025	47.7	352.0	0.0104	1.018	7.7	1.0010172
4,608.4	3.458.4	36.0	1.025	46.0	343.0	0.0104	1.018	7.7	1.0010172
4,608.5	3.458.5	35.5	1.025	47.7	334.0	0.0104	1.018	7.7	1.0010172
4,608.6	3.458.6	35.0	1.025	46.0	325.0	0.0104	1.018	7.7	1.0010172
4,608.7	3.458.7	34.5	1.025	47.7	316.0	0.0104	1.018	7.7	1.0010172
4,608.8	3.458.8	34.0	1.025	46.0	307.0	0.0104	1.018	7.7	1.0010172
4,608.9	3.458.9	33.5	1.025	47.7	298.0	0.0104	1.018	7.7	1.0010172
4,609.0	3.459.0	33.0	1.025	46.0	289.0	0.0104	1.018	7.7	1.0010172
4,609.1	3.459.1	32.5	1.025	47.7	280.0	0.0104	1.018	7.7	1.0010172
4,609.2	3.459.2	32.0	1.025	46.0	271.0	0.0104	1.018	7.7	1.0010172
4,609.3	3.459.3	31.5	1.025	47.7	262.0	0.0104	1.018	7.7	1.0010172
4,609.4	3.459.4	31.0	1.025	46.0	253.0	0.0104	1.018	7.7	1.0010172
4,609.5	3.459.5	30.5	1.025	47.7	244.0	0.0104	1.018	7.7	1.0010172
4,609.6	3.459.6	30.0	1.025	46.0	235.0	0.0104	1.018	7.7	1.0010172
4,609.7	3.459.7	29.5	1.025	47.7	226.0	0.0104	1.018	7.7	1.0010172
4,609.8	3.459.8	29.0	1.025	46.0	217.0	0.0104	1.018	7.7	1.0010172
4,609.9	3.459.9	28.5	1.025	47.7	208.0	0.0104	1.018	7.7	1.0010172
4,610.0	3.460.0	28.0	1.025	46.0	200.0	0.0104	1.018	7.7	1.0010172
4,610.1	3.460.1	27.5	1.025	47.7	191.0	0.0104	1.018	7.7	1.0010172
4,610.2	3.460.2	27.0	1.025	46.0	182.0	0.0104	1.018	7.7	1.0010172
4,610.3	3.460.3	26.5	1.025	47.7	173.0	0.0104	1.018	7.7	1.0010172
4,610.4	3.460.4	26.0	1.025	46.0	164.0	0.0104	1.018	7.7	1.0010172
4,610.5	3.460.5	25.5	1.025	47.7	155.0	0.0104	1.018	7.7	1.0010172
4,610.6	3.460.6	25.0	1.025	46.0	146.0	0.0104	1.018	7.7	1.0010172
4,610.7	3.460.7	24.5	1.025	47.7	137.0	0.0104	1.018	7.7	1.0010172
4,610.8	3.460.8	24.0	1.025	46.0	128.0	0.0104	1.018	7.7	1.0010172
4,610.9	3.460.9	23.5	1.025	47.7	119.0	0.0104	1.018	7.7	1.0010172
4,611.0	3.461.0	23.0	1.025	46.0	110.0	0.0104	1.018	7.7	1.0010172
4,611.1	3.461.1	22.5	1.025	47.7	101.0	0.0104	1.018	7.7	1.0010172
4,611.2	3.461.2	22.0	1.025	46.0	92.0	0.0104	1.018		

STATION, MOUNTAIN 4.510' / FETT, SH.
10 AUG. 1 145° 00' 0.0'
ASCE 5100 1.0. 1.0

FROM COPY LIST
2 PLATES
LC-57
100.31232 LUT, LEG
at GULF COAST HILLS
52.40175 LAT DEG
100.31232 LON, LEG

TABLE 14

REF ID	GROUP	REF ID	WATER LEVEL		ELEVATION	DETECTION	SPLIT
			ADJUSTED	DE, POL.			
150.0	5070.		26.5	13.9	4.0	140.2	7.2
001.0	6819.		21.4	11.9	5.0	151.0	11.7
750.0	8.90.		16.0	9.0	6.7	156.1	10.7
701.0	105.2.		11.1	7.0	7.9	158.0	6.0
650.0	12.70.		6.7	1.2	6.0	79.7	4.7
600.0	14715.		2.6	-6.1	5.0	15.0	4.0
550.0	170.7.		-1.5	-6.5	6.0	7.5.0	6.1
500.0	19.1.		-5.7	-25.6	1.0	17.0.1	4.0
450.0	22171.		-10.0	-27.2	2.0	24.0.0	5.2
400.0	25111.		-16.2	-35.1	0.0	23.4.0	15.7
350.0	26574.		-22.4	-39.7	1.0	20.0.0	16.0
300.0	32625.		-31.0	-46.0	0.0		

STATION ALTITUDE 3439.00 FEET MSL
 10 AUG. 61 1514 hrs MDI
 ASCENSION NO. 544

SIGNIFICANT L.VL DATA
 2200, 0544
 WHITE SANDS

GEODETIC COORDINATES
 32°40'43" LAT DEG
 106°37'33" LONG DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE, AIR DEGREES CENTIGRADE	REL. HUM. PERCENT
882.6	3989.0	31.6	32.0
850.0	5090.2	26.6	41.0
830.8	5751.3	24.9	44.0
793.2	7078.7	20.9	52.0
737.4	9132.5	14.6	66.0
700.0	10570.8	10.0	91.0
683.6	11220.0	9.8	66.0
657.2	12292.0	7.2	60.0
631.0	13389.1	4.8	69.0
613.8	14129.5	3.7	53.0
588.6	15244.6	1.1	60.0
572.0	15999.8	-7.3	50.0
563.8	16379.5	-1.1	68.0
547.2	17161.5	-2.8	39.0
539.2	17545.4	-2.8	25.0
500.0	19501.0	-5.9	21.0
415.6	24182.0	-15.1	22.0
400.0	25132.3	-15.9	18.0
		-34.7	

STATION ALTITUDE 3989.00 FEET MSL
 10 AUG. 61 1514 HRS MD
 ASCENSION NO. 544

UPPER AIR DATA
 2220020544
 WHITE SMITHS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 16

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. DEPOINT CENTIGRADE	PERCENT CENTIGRADE	REL.HUM. CLOUD CENTIGRADE	SOUND METER KNOTS	DIRECTION DEGREES (TN)	WIND DATA KNOTS	INDEX OF REFRACTION	
									G/M/CUBIC METER	INDEX OF REFRACTION
3989.0	882.6	31.6	12.9	32.0	1002.5	682.3	135.0	9.9	1.000264	
4000.0	882.3	31.6	12.9	32.1	1002.3	682.2	135.1	9.9	1.000264	
4500.0	867.3	29.3	12.7	36.2	992.6	679.7	140.4	10.7	1.000262	
5000.0	852.6	27.0	12.4	40.3	983.2	677.1	145.0	11.6	1.000260	
5500.0	838.0	25.5	12.0	42.9	971.2	675.4	148.6	12.6	1.000276	
6000.0	823.6	24.2	11.6	45.5	959.0	673.9	151.6	13.3	1.000273	
6500.0	809.4	22.6	11.2	48.5	947.3	672.1	153.2	13.7	1.000269	
7000.0	795.4	21.1	10.8	51.5	935.7	670.4	154.1	12.9	1.000265	
7500.0	781.4	19.6	10.3	54.9	924.2	668.6	154.8	11.8	1.000261	
8000.0	767.7	18.1	9.8	58.3	912.8	660.8	155.7	11.7	1.000259	
8500.0	754.2	16.5	9.2	61.7	901.6	665.0	157.2	11.8	1.000253	
9000.0	740.9	15.0	8.5	65.1	890.6	663.2	159.3	12.0	1.000249	
9500.0	727.7	13.4	8.6	72.4	879.4	661.4	159.1	10.7	1.000247	
10000.0	714.6	11.8	8.7	81.1	868.4	659.6	156.6	8.2	1.000246	
10500.0	701.8	10.2	8.6	89.8	857.5	657.0	145.1	5.7	1.000244	
11000.0	689.1	9.9	5.6	74.5	844.0	657.0	118.9	3.7	1.000231	
11500.0	676.6	9.1	2.8	64.4	831.5	655.9	105.0	3.2	1.000221	
12000.0	664.3	7.9	1.0	61.6	820.3	654.3	90.1	3.0	1.000214	
12500.0	652.2	6.7	-1	61.7	808.8	652.9	90.3	3.6	1.000210	
13000.0	640.2	5.7	-2	65.8	797.1	651.7	88.9	4.2	1.000207	
13500.0	628.4	4.6	-1.0	66.6	785.4	650.4	80.2	4.6	1.000203	
14000.0	616.8	3.9	-4.1	55.8	773.4	649.3	74.8	4.9	1.000195	
14500.0	605.3	2.8	-5.2	55.3	762.1	648.0	73.7	4.5	1.000190	
15000.0	594.0	1.7	-5.6	58.5	751.1	646.7	61.5	4.7	1.000186	
15500.0	582.9	.6	-7.0	56.6	740.0	645.4	95.7	5.7	1.000183	
16000.0	572.0	-3	-9.4	50.0	728.9	644.1	107.4	6.8	1.000178	
16500.0	561.2	-1.4	-7.4	63.5	717.0	643.0	116.6	6.0	1.000176	
17000.0	550.6	-2.4	-12.7	45.0	707.4	641.5	120.1	6.4	1.000169	
17500.0	540.1	-2.8	-19.3	26.7	695.4	640.9	135.3	6.9	1.000162	
18000.0	529.8	-3.5	-21.1	24.1	684.0	640.0	147.0	7.2	1.000158	
18500.0	519.7	-4.3	-22.3	23.0	672.9	639.0	167.1	5.8	1.000155	
19000.0	509.8	-5.1	-23.4	22.0	662.1	638.0	200.1	4.5	1.000152	
19500.0	500.0	-5.9	-24.6	21.0	651.4	637.1	236.5	5.1	1.000149	
20000.0	490.2	-6.9	-25.4	21.1	641.0	635.9	249.9	5.9	1.000147	
20500.0	480.7	-7.9	-26.2	21.2	630.9	634.7	257.1	7.0	1.000144	
21000.0	471.3	-8.8	-27.0	21.3	620.8	633.5	253.0	8.6	1.000142	
21500.0	462.0	-9.6	-27.7	21.4	611.0	632.3	249.9	10.1	1.000139	
22000.0	453.0	-10.4	-28.5	21.5	601.3	631.1	246.5	11.5	1.000137	
22500.0	444.1	-11.3	-29.3	21.6	591.7	630.0	241.9	12.7	1.000135	
23000.0	435.5	-12.3	-30.1	21.7	582.4	628.8	236.9	13.8	1.000133	

STATION ALTITUDE 3989.00 FEET MSL
 10 AUG. 81 1514 HRS MDT
 ASCENSION NO. 344

UPPER AIR DATA
 2220020544
 WHILE SAMUS

TABLE 16 CON'T

GEOMETRIC PRESSURE ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES MILLIBARS	REL. HUM. DEWPOINT PERCENT	SPEED OF SOUND METER KNOTS	WIND DATA DIRECTION DEGREES (IN) SPEED KNOTS	INDEX OF REFRACTION
CENTIGRADE	DEGREES	PERCENT	METER	(IN)	
23500.0	426.9	-13.8	-30.9	21.9	573.2 027.6
24000.0	419.6	-14.7	-31.7	22.0	564.1 026.4
24500.0	410.3	-15.4	-32.8	20.7	554.3 025.6
25000.0	402.1	-15.8	-34.3	18.6	544.2 025.1

GEOMETRIC COORDINATES
 32°40'04.3 LAT UEG
 106°37'03.3 LON UEG

STATION ALTITUDE 3989.00 FEET MSL
10 AUG. 81 1514 HRS MDT
ASCENSION NO. 544

MANDATORY LEVELS
2220020544
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 17

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE			REL. HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS
		AIR DEGREES	DEWPONT CENTIGRAU ^o	TEMPERATURE CENTIGRAU ^o			
850.0	5086.	26.6	12.3	41.	145.7	11.0	
800.0	6830.	21.6	10.9	51.	153.9	13.3	
750.0	8652.	16.1	9.0	63.	157.9	11.9	
700.0	10560.	10.0	8.6	91.	142.7	5.3	
650.0	12576.	6.6	-1.1	62.	90.3	3.7	
600.0	14718.	2.3	-5.4	57.	73.2	4.4	
550.0	17006.	-2.5	-13.1	44.	126.5	6.4	
500.0	19473.	-5.9	-24.6	21.	236.2	5.1	
450.0	22154.	-11.1	-28.8	22.	245.2	12.0	
400.0	25090.	-15.9	-34.7	18.			